REMARKS

The Office Action dated May 20, 2004, has been reviewed in detail and the application has been amended in the sincere effort to place the same in condition for allowance. Reconsideration of the application and allowance in its amended form are requested based on the following remarks.

Applicants retain the right to pursue broader claims under 35 U.S.C. §120.

Applicants have provided a unique solution with respect to problems regarding IN A METHOD OF MAKING GLASS, A METHOD AND DEVICE FOR THE CONTROL AND SETTING OF THE REDOX STATE OF REDOX FINING AGENTS IN A GLASS MELT. Applicants' solution is now claimed in a manner that satisfies the requirements of 35 U.S.C. §§102 and 103.

Rejection of Claims 1, 8, and 12 Under 35 U.S.C. §102:

Claims 1, 8, and 12 were rejected under 35 U.S.C. §102, as being unpatentable over Schumacher et al. (EP 261 725). Specifically, the Examiner stated that the "features of applicant's claims can be found in the abstract, page 2, lines 34-44, page 3, lines 30-58, and page 4, lines 1-13."

Schumacher, as best understood, shows a method of making

green glass from a melt of soda-lime glass. In order to use recycled glass, an oxidizing gas is blown into the melt of glass. The oxidizing gas oxidizes coloring components such as chromium oxide or iron oxide present in the glass melt. The glass melt also contains 4-15 kg of the nitrate compound saltpeter (page 3, line 14) per 1000 kg batch.

Claim 1, as amended, recites:

> "A method of refining glass in a melting unit, said melting unit comprising a continuously operable melting unit which melting unit comprises a portion to melt a feed material, said method comprising:
> producing a melt of molten glass from feed material in said portion to melt a feed material;
> minimizing at least one compound of nitrate in said melt by omitting said at least one compound of nitrate in the feed material;
> refining said melt by (i.), (ii.), (iii.), (iv.), and (v.):
> (i.) introducing at least one fining agent in said melt;
> (ii.) forming, in said melt, a first gas comprising at least one product of decomposition of the feed material;
> (iii.) forming, in said melt, a second gas comprising at least one product of decomposition of said at least one fining agent;
> (iv.) combining said first gas and said second gas into bubbles; and
> (v.) heating said melt to substantially remove said bubbles from said melt; and
> said method further comprising:
> introducing by blowing, during melting, a gas, comprising substantially oxygen, into said melt, and thereby setting and maintaining the reduction-oxidation state of said at least one fining agent in said melt of molten glass in the highest reduction-oxidation state."

In contrast to Schumacher, Claim 1 of the present application

recites "minimizing at least one compound of nitrate in said melt by omitting said at least one compound of nitrate in the feed material." Schumacher teaches using a glass melt that contains between 4-15 kg. of a nitrate compound, saltpeter, per 1000 kg batch. It is therefore believed that Claim 1 distinguishes over and is not rendered obvious by Schumacher.

Claim 8, as amended, recites:

> "A method of refining molten glass free of nitrate compounds, comprising the steps of:
> preparing a melt of molten glass free of nitrate compounds;
> said melt comprising at least one fining agent;
> introducing a gas, comprising substantially oxygen, into said melt of molten glass to set the reduction-oxidation state of said at least one fining agent in said melt of molten glass; and
> removing refined glass."

In contrast to Schumacher, Claim 8 of the present application recites a "method of refining molten glass free of nitrate compounds, comprising the steps of: preparing a melt of molten glass free of nitrate compounds." Schumacher teaches using a glass melt that contains between 4-15 kg. of a nitrate compound, saltpeter, per 1000 kg batch. It is therefore believed that Claim 8 distinguishes over and is not rendered obvious by Schumacher.

Claim 12, as amended, recites:

> "In a method of making glass, a method of setting and maintaining the reduction-oxidation state of fining agents in a

glass melt free of nitrate compounds, said setting and maintaining method comprising:

forming a melt of molten glass free of nitrate compounds; said melt comprising at least one fining agent; and

introducing, by blowing, a gas, comprising sufficient oxygen, into said melt, to set and maintain the reduction-oxidation state of said at least one fining agent in said melt of molten glass in the highest reduction-oxidation state."

In contrast to Schumacher, Claim 12 of the present application recites: "In a method of making glass, a method of setting and maintaining the reduction-oxidation state of fining agents in a glass melt free of nitrate compounds, said setting and maintaining method comprising: forming a melt of molten glass free of nitrate compounds." Schumacher teaches using a glass melt that contains between 4-15 kg. of a nitrate compound, saltpeter, per 1000 kg batch. It is therefore believed that Claim 12 distinguishes over and is not rendered obvious by Schumacher.

In view of the above, reconsideration and withdrawal of the present rejection is respectfully requested.

Rejection of Claims 2 and 3 Under 35 U.S.C. §103:

Claims 2 and 3 were rejected under 35 U.S.C. §103 as being unpatentable over Schumacher. Generally, the Examiner stated that Schumacher teaches the invention as claimed except for the specific recitation of bubbling oxygen beneath a batch blanket. The Examiner further stated that it would have been obvious to bubble oxygen

beneath a batch blanket in Schumacher "because a person of skill in the art would have expected the agitation of the glass melt to have a further advantage of mixing in unmelted glass batch materials."

Schumacher is discussed above. Claims 2 and 3 are dependent from Claim 1, which is believed to distinguish over Schumacher for the reasons presented above. Therefore, it is respectfully submitted that Claims 2 and 3 also distinguish over and are not rendered obvious by Schumacher. Reconsideration and withdrawal of the present rejection is therefore respectfully requested.

Rejection of Claims 4-7, 9-11, and 13-15 Under 35 U.S.C. §103:

Claims 4-7, 9-11, and 13-15 were rejected under 35 U.S.C. §103 as being unpatentable over Schumacher in view of Haft et al. (DE 4313217 C1). Specifically, the Examiner stated that:

> "Schumacher et al taught applicant's claimed invention except for the gas mixtures of claims 9 and 13 Haft et al taught that it was known to bubble nitrogen or water vapor along with oxygen into a glass melt being refined (see English language abstract by Derwent). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to include nitrogen or water vapor in a gas mixture with oxygen in the process of Schumacher et al because Schumacher et al taught that it was possible to use oxygen mixed with inert gases.
>
> Schumacher et al and Haft et al did not teach lithium-aluminum-silicate glasses. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to apply the known refining processes of Schumacher et al and Haft et al to any commonly used glass composition, as taught by Schumacher et al."

Schumacher is discussed above. Haft, as best understood, shows a process and a device for electrically heating a melt of neutral glass. The melt is homogenized and refined by blowing oxygen gas into it without the use of additional refining agents.

The Examiner states that Schumacher shows all of the features of the claimed invention as recited in Claims 1, 8, and 12, from which Claims 4-7, 9-11, and 13-15 depend respectively. Since, as discussed above, Schumacher does not show all of the features of Claims 1, 8, and 12, the combination fails to render obvious the invention as claimed in Claims 4-7, 9-11, and 13-15. Claims 4-7, 9-11, and 13-15 are therefore believed to be allowable over the applied references, either taken singly or in any reasonable combination thereof.

In view of the above, reconsideration and withdrawal of the present rejection is respectfully requested.

Art Made of Record:

The prior art made of record and not applied has been carefully reviewed, and it is submitted that it does not, either taken singly or in any reasonable combination with the other prior art of record, defeat the patentability of the present invention or render the present invention obvious. Further, Applicants are in agreement with the

Examiner that the prior art made of record and not applied does not appear to be material to the patentability of the claims currently pending in this application.

In view of the above, it is respectfully submitted that this application is in condition for allowance, and early action towards that end is respectfully requested.

Leave to Delay Treatment of Formal Objections Until Allowable Subject Matter is Indicated:

In accordance with 37 C.F.R. §1.111, it is hereby respectfully requested that any objections or requirements not fully treated and set forth in the outstanding Office action that relate to form and are not necessary to further consideration of the now pending claims, be held in abeyance until allowable subject matter is indicated.

Summary and Conclusion:

It is submitted that Applicants have provided a new and unique IN A METHOD OF MAKING GLASS, A METHOD AND DEVICE FOR THE CONTROL AND SETTING OF THE REDOX STATE OF REDOX FINING AGENTS IN A GLASS MELT. It is submitted that the claims, as amended, are fully distinguishable from the prior art. Therefore, it is requested that a Notice of Allowance be issued at an early date.

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Respectfully submitted,

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